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Chemical analysis may hit snags

By BRODIE FARQUHAR
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Trying to figure out what, if anything, is in the air, soil and water surrounding the Defense Technology tear-gas plant north of Casper, will be neither quick, easy or cheap.

County, state and federal agencies are working to address the concerns of a growing group of neighbors near

the plant who suspect that their health problems are somehow connected to plant emissions, testing of tear-gas grenades or recent fires at the plant.

Analysis of water, soil, meat, human blood or whatever can be run through numerous instruments and tests. One of the most powerful instruments of choice for chemists and toxicologists is the gas chromatograph (GC) or the even more powerful gas

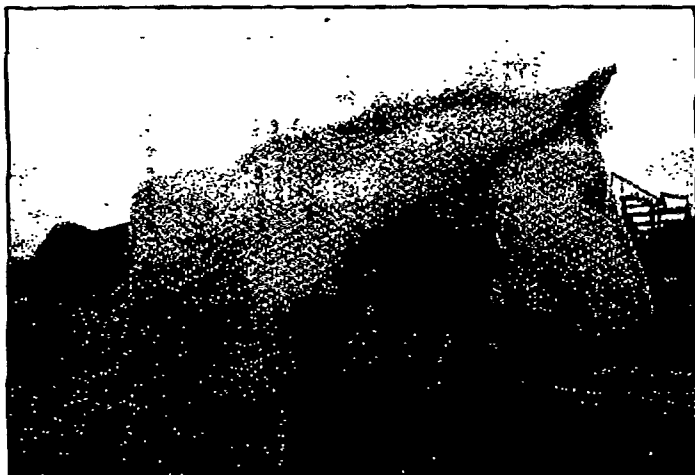
chromatography/mass spectrometer (GC/MS) — an assemblage of instruments that can be used to identify chemical compounds and elements.

Called "gold-standard" testing by Natrona County Coroner James Thorpen, the GC or GC/MS tests can be used to determine what illegal or prescription drugs were used in an overdose or suicide or what chemicals in a fire overcame a smoke inhalation vic-

tim. Thorpen doesn't have such equipment himself, so for more routine matters, Thorpen uses Wyoming Chemical Testing in Cheyenne, or for the more exotic cases, Universal Toxicology Lab in Midland.

The state's Public Health Laboratory in Cheyenne supports the state's epidemiological efforts by identifying microorganisms that cause disease. It

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The Lewises have several horses on their property, including this yearling, that they say are struggling with their health. They said several of their horses have weak appetites and cannot remain at a healthy weight.

Beef sample held for testing

By BRODIE FARQUHAR
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Fresh-slaughtered meat normally doesn't have a green tinge to it, nor does it have an unusual smell, but that's the case for a steer raised across the street from tear-gas manufacturer Defense Technology on Neosho Road.

Two steers and a couple of pigs raised by Tom and Kathy Mayo were slaughtered recently by Willard Pearce, a third-generation butcher who owns and operates Pearce Custom Butchering in Casper.

The Mayos believe they've become ill because of long-term exposure to Defense Technology chemical fumes and testing of tear-gas grenades from across the street, and have moved back into Casper to escape stinging eyes, sore throats and for Tom, the wracking

nausea and vomiting he experiences every time he's at his Neosho Road property.

He said he got sick every time he went to feed his animals.

"I got tired of it, so we decided to have the animals slaughtered for meat," Tom Mayo said.

Last Monday, after the animals had been slaughtered and dressed out, Pearce called the Mayos and asked them to come over and look at their beef meat.

Kathy Mayo said she was shocked when she saw the meat from animals she and her husband had been raising and planned to eat themselves. She said the meat had a green tinge and smelled strange — but not like rotten meat.

Pearce agreed.

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also has equipment designed to test for water quality, illegal drug toxicology and testing blood for alcohol content in drunk-driving cases.

Lab manager Richard Harris said the lab isn't set up for more complicated tasks, such as figuring out what might be in the air, soil and water surrounding the Defense Technology plant.

Such an assignment is a matter of matching up the right analyst with the right equipment, test methodology and having more than a glimmer of what you're looking for, agree Harris and Eric Highberger, environmental program principal for the Air Quality lab, Wyoming Department of Environmental Quality.

Neither lab has the in-house expertise or the pre-calibrated equipment needed to answer what, if anything, is bothering people who live around the Defense Technology plant. Harris and Highberger both agreed that it would require an experienced toxicologist and special-

ly-calibrated equipment. Both agreed that it will take time and a series of expensive tests to narrow down through the possibilities to any firm identification — if ever.

What can be especially frustrating, Highberger noted, is that the human nose can detect odors of some chemicals at concentration levels lower than what's detectable by many pieces of equipment.

Ideally, a lab would be found that has done previous work with the suite of chemicals used by Defense Technology, Harris said, and a toxicologist who understands what those compounds might break down into.

"That requires machines with vast databases," said Harris, to compare test results with known readings.

Air Quality Director Dan Olsen said that the more exotic or unusual the chemistry, the more difficult it is for health or environmental officials to detect it in the environment. "It isn't like we can grab something off the shelf," he said.

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"There was a greenish tint to a piece of it and it has an off-smell to it without a spoiled smell. When meat turns green it has a sour smell and this is not that particular way. It doesn't have a regular beef smell," he said.

"I know what meat looks and smells like," he said. Pearce worked in the Rocky Mountain Packing house years ago and has worked around meat all his adult life. The Mayos' meat is too light-colored and doesn't smell like meat, Pearce said. That's why he called the Mayos and the state Department of Agriculture.

June 6, the Mayos destroyed 52 chickens, 30 pheasant and 35 ducks. Kathy Mayo said she and husband Tom couldn't keep going out to their Neosho Road property, because they got sick on every trip. Kathy Mayo said the eggs of the birds were tasting strange and her sister became ill after eating one. She still has a few living turkeys and chickens brought in from the Neosho Road site, while a chicken and a goose have been left at the property.

Laurie Lels, of Customer Health Services in the department, said a local meat inspector and his supervisor traveled to Casper June 5 to collect tissue samples from the Mayo meat. Mr. Bob Harrington, director of the Natrona County Health Department, said the tissue samples would be stored in deep-freeze in the state's Health Department lab, until the Environmental Protection Agency can report what it found in taking soil and dust samples two weeks ago.

Joyce Ackerman of the EPA, said test results on the soil samples and dust wipes should be back in her Denver office by June 20. Water tests — covering volatile and semi-volatile chemi-

cals, heavy metals and gross alpha-beta (radioactivity) tests — should be coming back within the next two weeks. She said the labs are backed up with other business, so the Defense Technology tests were farmed out to many different labs.

At that point, Harrington said, the state and federal agencies will confer and see where the data is pointing, before deciding what addition steps or analysis to take — including testing the meat samples.

Dan Olsen, head of the Air Quality Division, said he and other state officials are waiting for test results to come back this week from the EPA. He said that while his department has expertise and equipment for the sort of environmental inspections one would anticipate from oil and gas or mining operations, he doesn't have the staff or equipment needed to investigate anything as unusual or exotic as tear-gas chemistry.

Olsen said he's never heard of a case in Wyoming where industrial pollution has affected livestock.